

Comparing Used Cooking Oil and Canola Oil on Carbon Intensity of the Renewable Diesel Life Cycle

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Abstract (Axel)

Used cooking oil (UCO) and Canola Oil are common feedstocks for renewable diesel (RD) production and can both qualify as low carbon fuels under the California Low Carbon Fuel Standard (LCFS). Due to rising prices of UCO, there has been lots of debate of putting heavier reliance on biogenic lipid feedstocks for RD production such as canola. However, these biogenic feedstocks have been shown to have a higher carbon intensity (CI) RD product than UCO-RD due to the carbon intensive front end processing to produce canola oil which includes cultivation, harvesting and land use change (LUC). To add discord to the debate of UCO vs. canola oil feedstock, this report aims to develop a simple life cycle analysis (LCA) model in CA-GREET 2.0 which can accurately calculate the carbon intensity of UCO and canola oil RD and verifying its results with a short literature review. By providing more insight to how LCA models that operate for policies such as the LCFS like CA-GREET 2.0, industry can better understand how to make informed decisions about feedstock usage, or other general LCA influencing process decisions.

Key Words: Renewable Diesel, Life Cycle Analysis, Feedstock, Carbon Intensity

